INSTRUCTION MANUAL

AcTiMon-X1 Network Accelerometer & Inclinometer

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This product should be installed and operated only by qualified personnel. Its misuse is potentially dangerous. The Company makes no warranty as to the information furnished in this manual and assumes no liability for damages resulting from the installation or use of this product. The information herein is subject to change without notification.

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AcTiMon-X1 User Guide

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1 Preamble

1.1 FCC Statement

This product has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
This device may not cause harmful interference.
This device must accept any interference received, including interference that may cause undesired operation.

This device must only be used with the supplied interface cables. A Class A digital device is intended for use in commercial, business and industrial environments.

1.2 Software License Agreement

PLEASE READ THIS SOFTWARE LICENSE AGREEMENT CAREFULLY BEFORE USING THE SOFTWARE.

License Grant: Roctest Ltd. ("Roctest") and its suppliers grant to Customer ("Customer") a nonexclusive and nontransferable license to use the software ("Software") in object code form only on as many central processing units as is required to support the functionality of the products used in conjunction with this software.

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1.3 Acceptable Use

The Roctest AcTiMon-X1 is a monitoring instrument only. It is not recommended for any use that requires the instrument to act as a triggering mechanism for critical functions. The AcTiMon-X1 is not to be used for:

Monitoring life support or patient diagnosis

Any type of input or controller for any process or system including, but not limited to:

- Automated production or manufacturing
- Life support or patient diagnosis
- Vehicle or machine control
- Emergency, redundant, or backup systems

It is the responsibility of the user to confirm that any use of the product conforms with all country, federal, state, county and municipal laws, ordinances and regulations.

2 AcTiMon-X1 Network Accelerometer and Inclinometer

2.1 General

The AcTiMon-X1 Network Accelerometer and Inclinometer is a 5-channel instrument that measures and streams 3-axis accelerations and 2-axis inclinations readings to a connected PC via Ethernet or USB interfaces.

2.2 Specifications

Size:	4.718" x 4.323" x 2.295"
Weight:	20 oz
Connectivity:	1 - M12 Ethernet & 1 - M12 USB communication
Power source:	Ethernet (PoE) or USB
Ethernet power consumption:	20mA @ 48V
USB power consumption:	200mA @ 5V
Housing material:	Billet aluminum
Status indicator:	Green LED
Accelerometer type:	3-axis MEMS
Accelerometer resolution:	.00001g
Accelerometer range:	±1.5g
Frequency response:	DC - 200 Hz (.1dB)
Accelerometer sample rate:	2000 samples / sec
Inclinometer type:	2-axis MEMS
Inclinometer range:	±15 degrees
Inclinometer resolution:	.00001 degrees
Inclinometer sample rate:	10 samples / sec
Device temperature range:	-40℃ to +80℃ (-40℉ t o 176℉)

2.3 LED Status Indicator

The AcTiMon-X1 has an indicator LED that is used to quickly determine the connection status. A green light indicates the ActiMon-X1 is connected to a PC via USB or connected to a network.

3 Getting started

The AcTiMon-X1 may be connected to a PC via USB or an Ethernet network and may be used with several different applications. It is useful to install the USB device driver even if the AcTiMon-X1 will be connected to a network because the USB connection may be used to set the IP address and other network parameters of the AcTiMon-X1. No device drivers are required for communication with the AcTiMon-X1 when it is connected to a network. You may install any or all of the software applications.

3.1 System Requirements

Please verify that your PC meets the following minimum system requirements:

Supported Operating System for the AcTiMon-X1 USB driver: Windows XP SP2 32 bit, Vista 32 bit, Windows 7 32&64 Bit.

Note: AcTiMon-X1 Ethernet supports all operating systems.

CPU:	Pentium 4, 1.4 GHz
System Memory (RAM):	1GB
Hard Disk:	2 GB free space (for data files)
Display:	1024 x 768, 32-bit “True Color"
Microsoft .NET Frameworks:	2.0 Service Pack 2 or newer and 3.5 SP1 or newer

Note: Microsoft .NET Framework software may be part of the operating system or may be installed as optional updates from Windows Update.

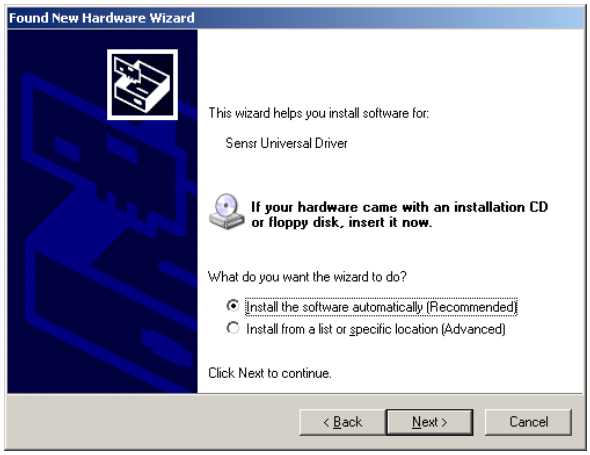
3.2 Installing the USB Device Driver

Start the driver installation by ensuring that the Roctest CD is in your PC and then connect the AcTiMon-X1 USB cable to the AcTiMon-X1. The USB cable may be identified by the USB trident logo on the USB connector. The connector on the USB cable is keyed to the AcTiMon-X1 USB connector so that it may only be inserted in the correct orientation. Push the cable connector into the AcTiMon-X1 connector and then screw the cable connector into the AcTiMon-X1 to lock the connectors together. The USB connector may be connected to any available USB connector on the PC.

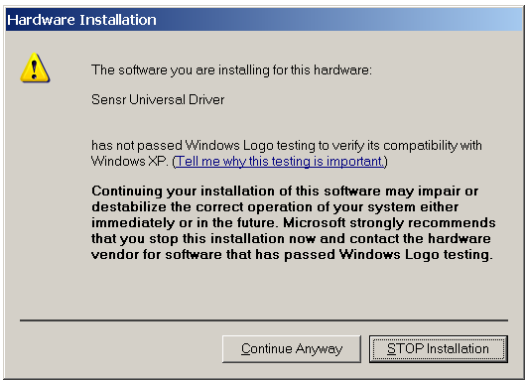
You should see an indication near the system tray that the computer has detected new hardware.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

A moment later, a dialog box will appear for the Found New Hardware Wizard. Do not allow the wizard to connect to Windows Update to search for software. Click the Next button.

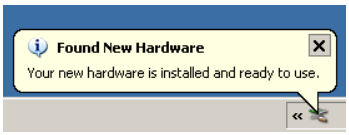

Found New Hardware Wizard
This wizard helps you install software for:
Sensr Universal Driver
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Allow the wizard to install the software automatically. Windows should search the Roctest CD for the appropriate drivers. If the wizard cannot find the correct software, you can install from a specific location. The drivers are located on the Roctest CD in the Drivers\CX Series USB Device Drivers Vx.x.x folder.


Hardware Installation
The software you are installing for this hardware:
Sensr Universal Driver
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

A warning will appear to advise you that the software has not passed Windows Logo testing. This is not a problem. Click the Continue Anyway button.

When the wizard is finished, this dialog box appears. Click the Finish button.



You should see an indication near the system tray that the computer has finished installing the device driver for the hardware.

3.3 Connecting the AcTiMon-X1 to an Ethernet network

Start by connecting the Ethernet cable to the AcTiMon-X1. The Ethernet cable may be identified by the 8P8C / RJ-45 connector. The connector on the Ethernet cable is keyed to the AcTiMon-X1 Ethernet connector so that it may only be inserted in the correct orientation. Push the cable connector into the AcTiMon-X1 connector, and then screw the cable connector into the AcTiMon-X1 to lock the connectors together. Finally, the 8P8C connector may be connected to an Ethernet computer network by inserting the connector into a network jack.

3.4 Connecting the AcTiMon-X1 to a PC via USB

If the device drivers are not already installed, please start with the driver installation procedure. After the drivers are installed, simply connect the USB connector to any available USB connector on the PC.

3.5 Available Software Applications

The AcTiMon-X1 comes with four software components that, when coupled with the AcTiMon-X1, perform different operations.

- CXRecorder - Designed to configure and collect data for both short durations and extended-lengths of time from up to 10 AcTiMon-X1 units via Ethernet or USB. The output can be saved as compressed SNSR files or uncompressed CSV files.

- CX Series Application Programming Interface – A required element for computer programmers developing software that communicates with AcTiMon-X1 units. This component facilitates the incorporation of AcTiMon-X1 units into new or existing monitoring environments.

- SensView – A graphics-based data viewer and analyzing program that lets users review real-time and collected data. The program can be used for short-duration monitoring and recording of data from one AcTiMon-X1.

- CXCapture – A command line program for controlling and collecting data from one or more AcTiMon-X1s.

3.6 Installing CXRecorder

CXRecorder is contained in a compressed folder located in the Applications folder on the Roctest CD. Double-click the icon for the compressed folder. A window should open to show the contents of the compressed folder. Drag the folder inside the window to a location on your desktop. CXRecorder is now located inside this folder on your desktop and is ready to be launched.

To execute the program, double-click the CXRecorder.exe file.

3.7 Installing the AcTiMon-X1 API

The CX Series API is contained in a compressed folder located in the Developer folder on the Roctest CD.

3.8 Installing SensView

SensView is contained in a compressed folder located in the Applications folder on the Roctest CD. Double-click the icon for the compressed folder. A window should open to show the contents of the compressed folder. Drag the folder inside the window to a location on your desktop. SensView is now located inside this folder on your desktop and is ready to be launched.

To execute the program, double-click the SensView.exe file.

3.9 Installing CXCapture

CXCapture is a command line program that is contained in a compressed folder located in the Applications folder on the Roctest CD. Double-click the icon for the compressed folder. A window should open to show the contents of the compressed folder. Drag the folder inside the window to a location on your desktop. CX Capture is now located inside this folder on your desktop and is ready to be launched using the command prompt.

4 Miscellaneous

4.1 Technical Support

If you have any questions about the product or require technical support, please contact us.

For North America and Asia: email us at info@roctest.com or call 1-877-ROCTEST. Standard hours of operation are 8:30 am - 5 pm EST, M-F.

For Europe: email us at support@smartec.ch or call +41 91 610 18 00. Standard hours of operation are 8:30 am - 5 pm CET, M-F.

4.2 AcTiMon-X1 Cleaning

The AcTiMon-X1 can be cleaned by dampening a cloth with Windex™ and wiping down the exterior surfaces.

4.3 AcTiMon-X1 Storage

Store the unit in a dry, indoor environment.

4.4 AcTiMon-X1 Calibration

The AcTiMon-X1 uses a DC response accelerometer and is calibrated using the Earth's gravity. The unit is factory-calibrated using precision surface plates and temperature chambers. Users who want to verify the calibration of their unit can connect the unit to a PC and see check outputs of the accelerometer against a level surface. By placing the flat sides of the AcTiMon-X1 against the level surface and flipping the AcTiMon-X1, users can compare and verify each axis response. Inclinometer response can be verified in a similar manner by rotating the AcTiMon-X1 and checking reported angles. If it is suspected the unit requires calibration, the user can contact the factory to arrange a review.

4.5 Product Warranty

Roctest Ltd. (“Roctest”) warrants to the original Customer (“Customer”) that Roctest brand instruments (“Product”) are free from defects in material and workmanship under normal use and service for a period of 1 year commencing upon the date of purchase.

This Limited Warranty is conditioned upon proper use of Product by Customer. This Limited Warranty does not cover: (a) defects or damage resulting from accident, misuse, abuse, neglect, unusual physical, electrical or electromechanical stress, or modification of any part of Product, including cables, or cosmetic damage; (b) equipment that has the serial number removed or made illegible; (c) any surfaces or other externally exposed parts that are scratched or damaged due to normal use; (d) malfunctions resulting from the use of Product in conjunction with accessories, products, or ancillary/peripheral equipment not furnished or approved by Roctest; (e) defects or damage from improper testing, operation, maintenance, installation, or adjustment; (f) installation, maintenance, and service of Product, or (g) Product used or purchased outside the United States or Canada. During the warranty period, Roctest will repair or replace, at Roctest’s sole option, without charge to Customer, any defective component part of Product. To obtain service under this Limited Warranty, Customer must contact Roctest Customer care at 1-877-ROCTEST. Upon receipt, Roctest will promptly repair or replace the defective Product. Roctest may, at Roctest’s sole option, use rebuilt, reconditioned, or new parts or components when repairing any Product or replace Product with a rebuilt, reconditioned or new Product. Repaired or replaced product will be warranted for a period equal to the remainder of the original Limited Warranty on the original Product or for 90 days, whichever is longer. All replaced parts, components, boards and equipment shall become the property of Roctest. If Roctest determines that any Product is not covered by this Limited Warranty, Customer must pay all parts, shipping, and labor charges for the repair or return of such Product.

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